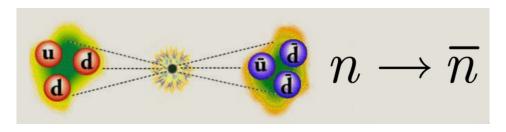
## Theoretical Innovations for Future Experiments Regarding Baryon Number Violation, Part 1



Contribution ID: 26

## Calculation of the Suppression Factor for Bound Neutron-Antineutron Transformation

Tuesday, August 4, 2020 10:30 AM (30 minutes)

Type: Oral Presentation

I review and revisit the calculation of the lifetime of nuclei due to neutron-antineutron oscillations. It is stressed that the oscillation and the subsequent annihilation take place mainly outside the nucleus and thus hardly suffer from drastic renormalization due to the nuclear medium. The ingredients of the calculation can be safely extracted from nuclear shell-model wave-functions, and optical models fitting the low-energy data on antinucleon-nucleus interaction. The main result is that the lifetime of a nucleus behaves as  $T=T_R\,\tau_{n\bar{n}}^2$ , with a factor  $T_R$ , often referred to as reduced lifetime or suppression factor of about  $10^{22-23}\,\mathrm{s}^{-1}$ . A remarkable feature is that  $T_R$  is stable against variations of the antinucleon-nucleus potential.

## **Contribution Title**

Calculation of the Suppression Factor for Bound Neutron-Antineutron Transformation

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